REMARKS

The Office Action mailed May 24, 2005 has been reviewed and carefully considered.

Claims 1, 3, 8-12, 14, 15, and 17-20 have been amended. New Claims 21 and 22 have been added. Claims 1-22 are pending.

Claims 3-6, 11, 12, 15, 18, and 19 have been objected to because of informalities. Claim 3 has been amended to now recite, *inter alia*, "a first surface acoustic wave (SAW)". Claims 11 and 12 have been amended to now recite, *inter alia*, "is selected from a group consisting of". Claim 15 has been amended to now recite, *inter alia*, "said first plurality of inductors" at lines 3 and 4. Claim 18 has been amended to now recite, *inter alia*, "[t]he diplexer of claim 17", as Claim 17 first recites "a "selector" so as to now provide antecedent basis for "the selector" in Claim 18. Accordingly, withdrawal of the objection is respectfully requested.

Claims 15 and 19 stand rejected under 35 U.S.C. §112, first paragraph. Claim 15 has been amended to now recite, *inter alia*, the portion consisting of any of the first plurality of inductors which are connected to said notch filter via the respective capacitor". Support for the preceding amendment may be found at least in FIG. 4. Claim 19 depends from Claim 15. Accordingly, Claims 15 and 19 are now believed to satisfy 35 U.S.C. §112, first paragraph. Reconsideration of the rejection is respectfully requested.

Claims 1, 7, 10, 11, 14, 17, and 18 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,308,051 to Atokawa (hereinafter "Atokawa '051"). Moreover, Claims 1, 2, 8, 10, 14, 16, 17, and 20 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,414,566 to Atokawa (hereinafter "Atokawa '566").

It is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest "a resonator-free, non-resonator-actuated notch filter selectively coupled to the low-pass filter in response to indicium of a desired spectral region", as recited in Claims 1 and 14.

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest "a first low-pass filter selectively coupled to a resonator-free, non-resonator-actuated notch filter", as recited in Claim 20.

In contrast, Atokawa '051 discloses a frequency variable trap circuit 28 designated by the Examiner as a low-pass circuit (Office Action, p. 4), and a resonant-dependent notch filter designated by the Examiner to include elements D3, L4, R2, and C13 of FIG. 1 of Atokawa '051. That is, the notch filter operates dependent upon a state of at least resonator D4. For

example, Atokawa '051 discloses that "[t]he frequency variable trap circuit 28 is provided with the resonator 4 which is electrically connected through the capacitor C7 for resonance at the intermediate connection point of the surface acoustic wave filter circuit 30 and the second phase shifter 29. The series circuit of the variable bandwidth capacitor C8 and the PIN diode D3 is electrically connected in parallel to the resonator 4 in a condition where a cathode of the PIN diode D3 is grounded at the intermediate connection point of the resonator 4 to the capacitor C7 for resonance" (Atokawa '051, col. 5, lines 48-57).

Moreover, in contrast to the above-recited limitations of Claims 1, 14, and 20, Atokawa '566 discloses a bandpass elimination filter formed from at least resonators R1 and R2. In relation, the Examiner has designated that Atokawa '056 discloses a low pass filter between the ANT and TX terminals shown in FIG. 2 and a notch filter that includes elements C20, C10, LT2, LT1, CT, and RT also shown in FIG. 2 (Office Action, p. 5). The portion of the circuit shown in FIG. 2 of Atokawa '566 that the Examiner has deemed a notch filter is dependent upon a state of at least resonators R1 and R2. For example, column 4, lines 36-37 and 51-61, and column 5, lines 25-36 of Atokawa '566 disclose

> [R]esonant frequencies of the resonators R1 and R2 are individually used as attenuation poles. ... In the transmitting filter, a serial circuit is formed of a diode D1 and a capacitor 10 is formed between the end and the grounded point of the resonator R1. A serial circuit formed of a diode D2 and a capacitor 20 is formed between the end and the grounded point of the resonator R2. An RF-blocking circuit formed of an inductor LT1, a resistor RT, and a capacitor CT is provided between the control-signal input terminal CONT1 and the diode D1. An RF-blocking circuit formed of an inductor LT2, the resistor RT, and the capacitor CT is provided between the control-signal input terminal CONT1 and the diode D2. ... [I]n response to a predetermined positive voltage applied to the control-signal input terminal CONT1, the diodes D1 and D2 become conductive, and the capacitors 10 and 20 are substantially parallel-connected to the resonators R1 and R2, respectively. Thereby, individual resonant frequencies of the resonators R1 and R2 decrease. When the application voltage to the control-signal input terminal CONT1 is reduced to 0V, the diodes D1 and D2 are blocked. Therefore, the capacitors 10 and 20 are disconnected from the

resonators R1 and R2, respectively, thereby increasing the resonant frequencies of the resonators R1 and R2.

Accordingly, none of Atokawa '061 and Atokawa '566, either taken singly or in combination, teach or suggest a resonator-free, non-resonator-actuated notch filter selectively coupled to the low-pass filter, as essentially recited in each of Claims 1, 14, and 20.

A reference cited against a claim under 35 U.S.C. §102 must disclose each and every limitation of the rejected claim. Accordingly, independent Claims 1, 14, and 20 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above.

Claims 2, 3, 5, 6, and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,804,262 to Vogel (hereinafter "Vogel") in view of Atokawa. Claims 2 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vogel in view of Atokawa '566. Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Vogel in view of Atokawa '566 and in further view of U.S. Patent Publication No. 2002/0159511 to Wilson (hereinafter "Wilson"). Claims 4 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vogel in view of Atokawa, and in further view of U.S. Patent No. 6,690,655 to Miner et al. (hereinafter "Miner").

"If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Claims 2-13 and 21 depend from Claim 1 or a claim which itself is dependent from Claim 1 and, thus, includes all the elements of Claim 1. Accordingly, Claims 2-13 and 21 are patentably distinct and non-obvious over the cited reference for at least the reasons set forth above with respect to Claim 1.

Claims 15-19 and 22 depend from Claim 14 or a claim which itself is dependent from Claim 14 and, thus, includes all the elements of Claim 14. Accordingly, Claims 15-19 and 22 are patentably distinct and non-obvious over the cited reference for at least the reasons set forth above with respect to Claim 14.

Moreover, said dependent claims include patentable subject matter in and of themselves and are, thus, patentably distinct and non-obvious over the cited references in their own right. For example, none of the cited references teach or suggest the following limitations of Claim 15:

a first plurality of inductors connected in series between said first and third signal ports, each of said first plurality of inductors being coupled to ground via a respective capacitor forming thereby a plurality of single pole filter elements, a portion of said first plurality of inductors being bypassed by respective capacitors, the portion consisting of any of the first plurality of inductors which are connected to said resonator-free, non-resonator-actuated notch filter via the respective capacitor; and

said resonator-free, non-resonator-actuated notch filter comprises: a second plurality of inductors, where each inductor is respectively coupled between a portion of the capacitors of the single pole filter elements of the low-pass filter and ground.

In fact, Claim 15 is not even mentioned in the Office Action with respect to any cited art.

Moreover, it is respectfully asserted that none of the cited references teach or suggest "wherein said notch filter comprises a plurality of inductors and a plurality of pin diodes, each of the plurality of inductors having a first end and a second end, each of the plurality of inductors connected in parallel with a respective one of the plurality of pin diodes at the first end and a common control node at the second end", as recited in each of Claims 21 and 22.

Accordingly, reconsideration of the rejections is respectfully requested.

In view of the foregoing, Applicants respectfully request that the rejection of the claims set forth in the Office Action of May 24, 2005 be withdrawn, that pending claims 1-22 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

Please charge the $100 fee, for the two (2) additional claims over 20, and any other fees that may be associated with the filing of this response, to Deposit Account No. 07-0832.

Respectfully submitted,

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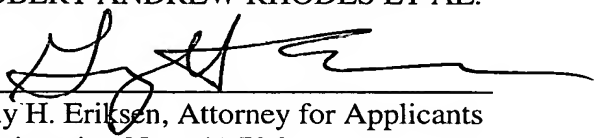
By: 

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